CHAPTER V
PLAN FORMULATION APPROACH

This chapter discusses the process followed for formulating plans for the LVE, and presents the planning objectives, planning constraints and criteria, and mission statement for the study.

PLAN FORMULATION PROCESS

The basic plan formulation process for Federal water resources studies and projects consists of the following steps:

- Specify water resources and related problems and opportunities.
- Inventory existing conditions and forecast likely without-project future conditions in the study area.
- Identify resource management measures and formulate alternative plans.
- Evaluate effects of alternative plans.
- Compare alternative plans.
- Select a plan for recommended implementation.

For the LVE, the above process was separated into three major phases:

- **Initial Plans Phase –** Identify without-project future conditions, define resulting resource problems and opportunities; define a specific set of planning objectives; identify the constraints and criteria in addressing the planning objectives; identify potential resource management measures to address planning objectives; and formulate, coordinate, and compare a set of concept plans. From these concept plans, identify a set of initial alternatives.

- **Alternative Plans Phase –** From the initial alternatives, formulate specific alternative plans to address the planning objectives; evaluate, coordinate, and compare the plans; and identify a plan for tentative recommendation.

- **Recommended Plan Phase –** Complete the development of a tentatively recommended plan and prepare, coordinate, and process supporting decision documentation.

Figure V-1 shows the relationship of the three phases, major elements within each phase, and the resulting product (report) for each phase.

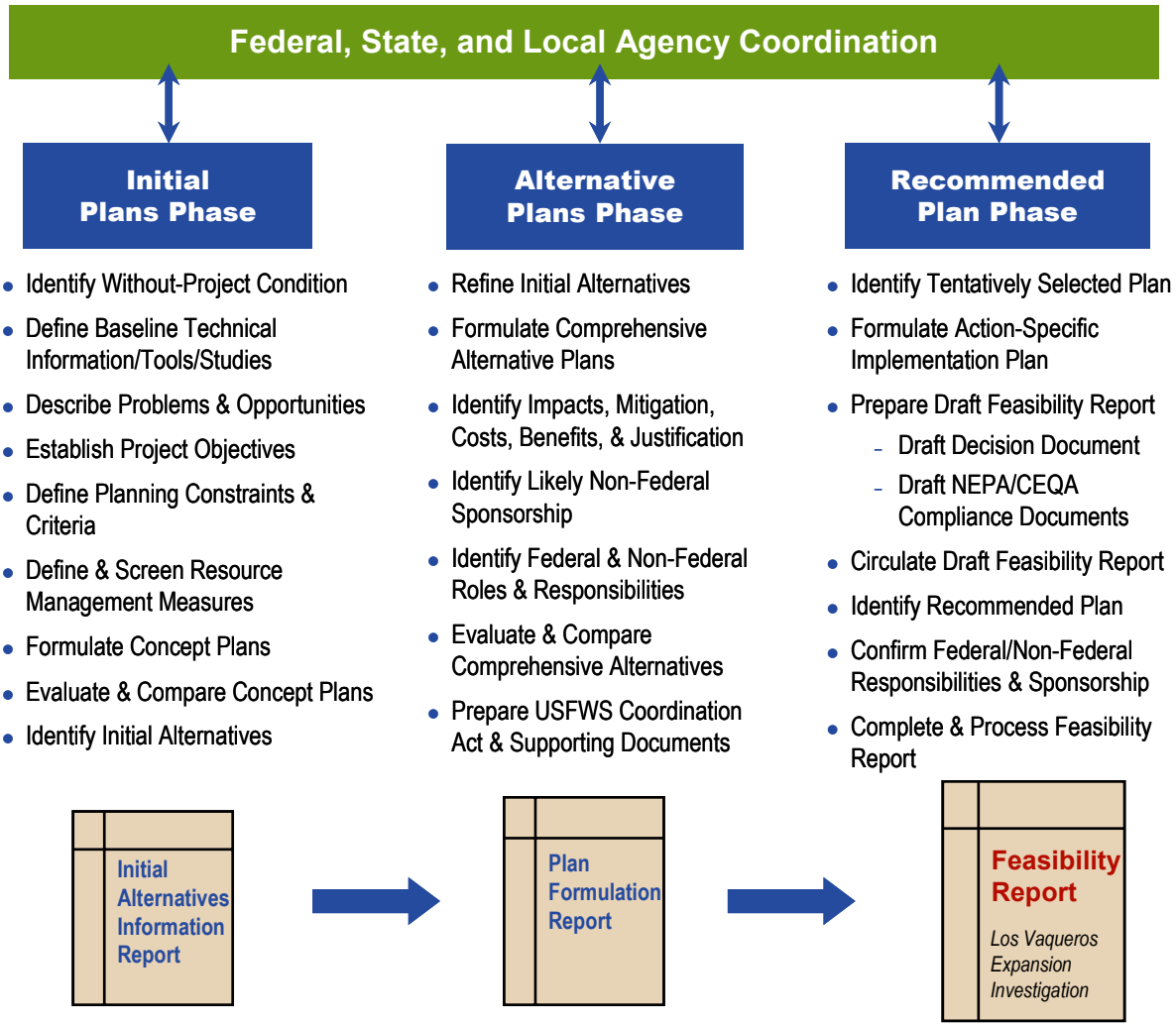

FIGURE V-1 – PLAN FORMULATION PROCESS

The Initial Plans phase, documented herein, is nearing completion. A summary of existing and potential future without-project conditions (consistent with the NEPA Baseline) and problems and opportunities is included in **Chapters III** and **IV**, respectively. This chapter presents the identified planning objectives, principles, constraints, and criteria to help guide the LVE. **Chapters VI**, **VII**, and **VIII** describe the formulation of a set of initial plans. **Chapter VI** identifies resource management measures. From these measures, a representative set of concept plans was formulated, which is discussed in **Chapter VII**. **Chapter VIII** compares the concept plans and identifies initial alternatives for further development in feasibility studies for the LVE.

PLANNING OBJECTIVES

The following objectives were developed on the basis of the previously identified and defined problems and opportunities in the study area, specific direction in the study authorization, and requirements in the P&G and other Reclamation guidance. These objectives were used as a basis for identifying and screening measures and formulating concept plans to address the identified problems and opportunities.

- *Increase water supply reliability for water providers within the study area, principally to help meet municipal and industrial water demands during drought periods, with a focus on enlarging Los Vaqueros Reservoir.*
- *Use an expanded Los Vaqueros Reservoir to develop replacement water supplies for the long-term Environmental Water Account, if the cost of water provided from an expanded reservoir is found to be less than the cost of water for continued implementation of that program.*
- *To the extent possible through pursuit of the water supply reliability and environmental water objectives, improve the quality of water deliveries to municipal and industrial customers in the study area.*

The planning objectives help clarify the identified problems and opportunities and narrow the focus of future study efforts. For example, the first study objective clarifies the need to improve water supply reliability in the primary study area (Bay Area) during drought periods. Drought periods are when water supplies for urban uses are needed most, rather than in average or wet periods when supplies are in greater abundance. The objective also stresses that enlarging Los Vaqueros Reservoir is an important study focus, although it does not limit which alternatives should be considered to solve potential problems.

The second planning objective focuses the study on determining whether an expansion of Los Vaqueros Reservoir could provide a less-costly water supply for the EWA; such a supply would replace all or a portion of the water the EWA currently acquires through short-term transfers and/or transfer market water purchases. It is important to distinguish the difference between identifying a less-costly replacement supply versus a least-cost replacement supply. The LVE will not be evaluating all of the potential ways the EWA could acquire water or determine the least-costly alternative supply; instead, the LVE will focus on how an expanded Los Vaqueros Reservoir could be implemented to provide replacement water supplies for the EWA, and whether those supplies would cost less than under the existing acquisitions-based program. An important without-project condition in the analysis is that the EWA, or a similar water acquisition program, will continue into the long-term future (beyond the currently authorized program), and the study will examine a 100-year project life (generally considered the useful life of a dam and reservoir).

The last objective highlights the opportunity to improve delivered water quality while addressing the objectives of water supply reliability and EWA replacement supply. This objective does not focus on identifying ways to improve delivered water quality independent of the first two objectives; instead, alternatives to address the first two study objectives would be refined, modified, and/or enhanced, as appropriate, to improve the quality of delivered water supplies.

PLANNING CONSTRAINTS, PRINCIPLES, AND CRITERIA

This section describes planning constraints, principles, and criteria used to help guide the investigation. In particular, attention is paid to the CCWD Board of Director's Resolution No. 03-24, June 25, 2003, and the language of Measure N, approved by the CCWD voters in March 2004. These considerations provide important guidance for the ultimate identification and formulation of a locally preferred plan, to the extent that a recommended plan involves modification of Los Vaqueros Reservoir.

Constraints

Fundamental to the plan formulation process is identifying and developing basic constraints specific to this investigation. Planning constraints, along with the objectives, are used to help guide the conduct of the feasibility study. Some planning constraints are rigid, such as congressional instruction; current applicable laws, regulations, and policies; and physical conditions (topography, hydrology, etc.). Other planning constraints are less stringent but are still influential in guiding the feasibility study. Examples include existing water resource projects and programs such as CALFED and the CVPIA. Major constraints in formulating and ultimately implementing a plan to address LVE study objectives are described below:

- **Study Authorization** – The Omnibus Appropriations Act of 2003 authorized the Secretary of Interior, in carrying out CALFED-related activities, to undertake feasibility studies for enlarging Los Vaqueros Reservoir. Congress again authorized the Secretary to conduct planning and feasibility studies for enlarging Los Vaqueros Reservoir in the October 2004 Water Supply, Reliability, and Environmental Improvement Act (Public Law 108-361).

- **Laws, Regulations, and Policies** – Numerous laws, regulations, executive orders, and policies need to be considered, including NEPA, Fish and Wildlife Coordination Act, Clean Air Act, Clean Water Act, Federal and State ESAs, CEQA, and the CVPIA.

Other considerations in the planning process include the CALFED ROD and the CCWD Board of Director's Principles, as discussed below.

The ROD includes program goals, objectives, and projects primarily to benefit the Bay-Delta system. The multiagency adoption of the ROD recognized that by signing the ROD, each agency would exercise its respective authority over only those portions of the ROD relevant to its existing Federal or State authority. While signatories may individually support programs and planning consistent with their specific authorities, it is believed that all projects, especially those directly affecting the Bay-Delta system, should be in harmony with the ROD and the Preferred Program Alternative it supports.

The CCWD Board of Directors Principles, and voter approval, represent a significant institutional agreement between one of the non-Federal sponsors and its constituents. (these principles and voter approval are described in **Chapter II)**. For maximum influence on the planning process, it is important to consider these principles and voter approval where they will have the greatest effect. This has been achieved by (1) identifying planning objectives to improve water quality and reliability for CCWD and other study area water purveyors, and (2)

identifying planning principles (presented in the next section) to protect historical resources and preserve and increase recreational and environmental opportunities associated with Los Vaqueros Reservoir. CCWD's principles related to Los Vaqueros ownership, project operation, and financial involvement are issues of potential local acceptability (see criteria discussion below and in **Chapter VIII**).

Planning Principles

In addition to the planning constraints, a series of planning principles was identified to help guide plan formulation and evaluation and help assess which alternatives best address the planning objectives. Planning principles and guidelines relate to economic justification, environmental compliance, technical standards, and other issues. Many of the planning principles result from the Federal Economic and Environmental Principles and Guidelines for water and Related Land Resources Implementation Studies, or "P&G," and other Federal planning regulations. Others result from local policies, practices, and conditions. Planning principles used throughout the LVE in formulating, evaluating, and comparing concept plans, initial alternatives, and later, detailed alternatives, include the following:

- Alternatives and their major elements should be consistent with the identified planning constraints above.

- A direct and significant geographical, operational, and physical dependency should exist between major components of alternatives.

- Alternatives should address at least one of the identified planning objectives, but preferably all of the objectives.

- Measures to address the objectives should be either directly or indirectly related to one another (i.e., plan features should not be independent increments).

- Alternatives should avoid potential adverse impacts to hydrologic and/or hydraulic systems such as water supply pumping and conveyance facilities, flood control works, or other significant water resources related impacts in the primary study area.

- Alternatives should consider and avoid impacting CVP and SWP programs and projects outside the primary study area.

- Alternatives should either avoid potential adverse impacts to environmental resources or include features to mitigate unavoidable impacts through enhanced designs, construction methods, and/or facilities operations.

- Alternatives should avoid potential adverse impacts to present or historical cultural resources or include features to mitigate unavoidable impacts.

- Alternatives should not result in a significant adverse impact to existing or future water supplies, recreation facilities, hydropower generation, and related water resource conditions.

- Alternatives should reflect the purposes, operations, and limitations of existing and without-project future projects and programs.

- Alternatives should avoid adverse impacts to and, to the extent possible, improve recreational opportunities at the existing Los Vaqueros Project.

- Alternatives involving a new dam or modification of an existing dam and reservoir should be formulated and evaluated based on a 100-year period of analysis.

- First costs for alternatives should reflect current prices and price levels, and present worth costs are to use the current Federal discount rate and an allowance for interest during construction, operation and maintenance, and major replacements.

- Alternatives should have a high certainty of achieving the intended benefits and not significantly depend on long-term actions (past the initial construction period) for success.

- Alternatives should be formulated to neither preclude nor enhance development and implementation of other elements of CALFED or other water resources programs and projects in the Central Valley.

Criteria and Concept Plan Evaluation

Alternatives in a Federal feasibility study are initially evaluated according to four criteria based on the Federal P&G for water resources: (1) completeness, (2) effectiveness, (3) efficiency, and (4) acceptability. Alternatives will be evaluated on their relative ability to meet each of the criteria as described and explained below (see also **Chapter VIII**).

- **Completeness -** Completeness is a determination of the extent to which a given alternative plan provides and accounts for all necessary investments or other actions to ensure the realization of the planned effects. Each alternative is given a completeness ranking ranging from low to high, primarily depending on the degree of uncertainty (or reliability) of achieving the intended objectives and adequately mitigating significant adverse impacts.

- **Effectiveness -** Effectiveness is the extent to which an alternative plan alleviates problems and achieves its objectives. For example, in the case of water supply reliability or water quality objectives, effectiveness may be considered in terms of a measured increase in water supply or the ability to achieve a specific water quality goal, respectively.

- **Efficiency -** Efficiency is the extent to which an alternative plan is the most cost-effective means of alleviating specified problems and realizing specified opportunities, consistent with protecting the Nation's environment. Some potential ways to evaluate efficiency include comparing dollars per unit of economic benefit, least-cost of attaining a given objective, and lower opportunity cost relative to the accomplishments of other alternatives.

- **Acceptability -** Acceptability is the workability and viability of the alternative plan with respect to acceptance by State and local entities and the public, and compatibility with existing laws, regulations, and public policies. Acceptability may be evaluated according to a plan's ability to be implemented within existing laws and policies; consistency with stated

project principles; or the potential for broad-spectrum acceptance or support. For the LVE, one example of acceptability to the local sponsor may include the extent to which CCWD retains control of the watershed and operation of Los Vaqueros Reservoir.

As the study progresses, specific metrics for, and methods of, both qualitatively and quantitatively comparing the completeness, effectiveness, efficiency, and acceptability of alternative plans will be developed. However, because detailed alternative plans will not be developed until the next stage of the LVE (the Plan Formulation Phase), the four criteria are applied more broadly to the concept plans identified later in this document.

THIS PAGE LEFT BLANK INTENTIONALLY